What is claimed is:

1. A method for scheduling data transmissions in a wireless communication system between a base station and a plurality of mobile terminals, said method comprising:

calculating the value of a scheduling metric for each mobile terminal in said plurality of mobile terminals, wherein said scheduling metric is representative of a transmission control protocol (TCP) throughput for each of said mobile terminals; and

scheduling transmissions between said base station and said mobile terminals as a function of said calculated values of said scheduling metric.

2. The method of claim 1 wherein the step of scheduling comprises:

comparing the calculated values of said scheduling metric for each mobile terminal; and

scheduling that mobile terminal having the highest value of said scheduling metric.

3. The method of claim 1 wherein said scheduling metric is calculated for each mobile terminal using only information available at a Medium Access Control layer in said wireless communication network.

4. The method of claim 1 wherein said scheduling metric is a function of at least one of:

the inter-scheduling delay in serving a queue in said network; and

the second moment of said inter-scheduling delay.

5. The method of claim 4 wherein said scheduling metric is a function of at least one of:

the size of a queue in said network;

a desired transmission rate related to a user in said network; and

a data throughput at a network protocol layer in said network.

6. The method of claim 1 wherein said scheduling metric is a function of the system time of a packet.

7. The method of claim 1 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by a data throughput at a network protocol layer in said network.

8. The method of claim 1 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i}$ where Q_i is the average size of a queue for a user i in a Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

9. The method of claim 1 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by the square of a data throughput at a network protocol layer in said network.

10. The method of claim 1 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i^2}$ where Q_i is the average size of a queue for a user i in a Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

11. The method of claim 1 wherein said scheduling metric is defined as:

$$M_i^{(TCP-PF)}[n] = \frac{R_i[n]}{A_i[n-1]}\left[\frac{1}{2}\frac{\hat{\Sigma}_i[n]}{\hat{\Phi}_i[n]} + \frac{Q_i[n]}{A_i[n-1]}\right]$$

where $R_i[n]$ is a desired transmission rate in a network at a timeslot n for a user i, $A_i[n-1]$ is an average Medium Access Control (MAC) layer throughput for

user i up to and including a timeslot n-1, $\hat{\Sigma}_i[n]$ is a second moment of an inter-scheduling interval for user i at timeslot n in said network, $\hat{\Phi}_i[n]$ is an average inter-scheduling interval for user i at timeslot n in said network, and $Q_i[n]$ is the average size of a queue for a user i in said MAC layer in said network.

12. Apparatus for use in scheduling data transmissions in a wireless communication system between a base station and a plurality of mobile terminals, said apparatus comprising:

a first circuit for calculating the value of a scheduling metric for each mobile terminal in said plurality of mobile terminals, wherein said scheduling metric is representative of a transmission control protocol (TCP) throughput for each of said mobile terminals; and

a second circuit for scheduling transmissions between said base station and said mobile terminals as a function of said calculated values of a scheduling metric.

13. The apparatus of claim 12 wherein said first circuit and said second circuit comprise the same circuit.

14. The apparatus of claim 12 further comprising:

a third circuit for comparing the calculated values of said scheduling metric for each mobile terminal,

wherein said second circuit schedules for transmission that mobile terminal having the highest value of said scheduling metric.

15. The apparatus of claim 14 wherein said first circuit, said second circuit and said third circuit comprise the same circuit.

16. The apparatus of claim 12 wherein said first circuit calculates said scheduling metric for each mobile terminal using only information available at a Medium Access Control layer in said wireless communication network.

17. The apparatus of claim 12 wherein said scheduling metric is a function of at least one of:

the inter-scheduling delay in serving a queue in said network; and

the second moment of said inter-scheduling delay.

18. The apparatus of claim 17 wherein said scheduling metric is a function of at least one of:

the size of a queue in said network;

a desired transmission rate related to a user in said network; and

a data throughput at a network protocol layer in said network.

19. The apparatus of claim 12 wherein said scheduling metric is a function of the system time of a packet.

20. The apparatus of claim 12 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by a data throughput at a network protocol layer in said network.

21. The apparatus of claim 12 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i}$ where Q_i is the average size of a queue for a user i in a Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

22. The apparatus of claim 12 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by the square of a data throughput at a network protocol layer in said network.

23. The apparatus of claim 12 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i^2}$ where Q_i is the average size of a queue for a user i in a

Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

24. The apparatus of claim 4 wherein said scheduling metric is defined as:

$$M_i^{(TCP-PF)}[n] = \frac{R_i[n]}{A_i[n-1]}\left[\frac{1}{2}\frac{\hat{\Sigma}_i[n]}{\hat{\Phi}_i[n]} + \frac{Q_i[n]}{A_i[n-1]}\right]$$

where $R_i[n]$ is a desired transmission rate in a network at a timeslot n for a user i, $A_i[n-1]$ is an average Medium Access Control (MAC) layer throughput for user i up to and including a timeslot n-1, $\hat{\Sigma}_i[n]$ is a second moment of an inter-scheduling interval for user i at timeslot n in said network, $\hat{\Phi}_i[n]$ is an average inter-scheduling interval for user i at timeslot n in said network, and $Q_i[n]$ is the average size of a queue for a user i in said MAC layer in said network.

25. A scheduler for use in scheduling future data transmissions from a base station to a plurality of mobile terminals in a wireless communications system, said scheduler comprising:

means for calculating the value of a scheduling metric for each mobile terminal in said plurality of mobile terminals, wherein said scheduling metric is representative of a transmission control protocol (TCP) throughput for each of said mobile terminals; and

means for scheduling transmissions between said base station and said mobile terminals as a function of said calculated values of a scheduling metric.

26. The apparatus of claim 25 wherein the means for scheduling comprises:

means for comparing the calculated values of said scheduling metric for each mobile terminal; and

means for scheduling that mobile terminal having the highest value of said scheduling metric.

27. The apparatus of claim 25 wherein said means for scheduling calculates said scheduling metric for each mobile terminal using only information available at a Medium Access Control layer in said wireless communication network.

28. The apparatus of claim 25 wherein said scheduling metric is a function of at least one of:

the inter-scheduling delay in serving a queue in said network; and

the second moment of said inter-scheduling delay.

29. The apparatus of claim 28 wherein said scheduling metric is a function of at least one of:

the size of a queue in said network;

a desired transmission rate related to a user in said network; and

a data throughput at a network protocol layer in said network.

30. The apparatus of claim 25 wherein said scheduling metric is a function of the system time of a packet.

31. The apparatus of claim 25 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by a data throughput at a network protocol layer in said network.

32. The apparatus of claim 25 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i}$ where Q_i is the average size of a queue for a user i in a Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

33. The apparatus of claim 25 wherein said scheduling metric is a function of the size of a queue in said network multiplied by a desired transmission rate related to a user in said network divided by the square of a data throughput at a network protocol layer in said network.

34. The apparatus of claim 25 wherein said scheduling metric is a function of $\frac{R_i Q_i}{A_i^2}$ where Q_i is the average size of a queue for a user i in a Medium Access Control (MAC) layer in said network, A_i is an average MAC layer throughput for said user i in said network, and R_i is a desired transmission rate for said user i in said network.

35. The apparatus of claim 25 wherein said scheduling metric is defined as:

$$M_i^{(TCP-PF)}[n] = \frac{R_i[n]}{A_i[n-1]}\left[\frac{1}{2}\frac{\hat{\Sigma}_i[n]}{\hat{\Phi}_i[n]} + \frac{Q_i[n]}{A_i[n-1]}\right]$$

where $R_i[n]$ is a desired transmission rate in a network at a timeslot n for a user i, $A_i[n-1]$ is an average Medium Access Control (MAC) layer throughput for user i up to and including a timeslot n-1, $\hat{\Sigma}_i[n]$ is a second moment of an inter-scheduling interval for user i at timeslot n in said network, $\hat{\Phi}_i[n]$ is an average inter-scheduling interval for user i at timeslot n in said network, and $Q_i[n]$ is the average size of a queue for a user i in said MAC layer in said network.